

Item 6A.  
BCWMC 6-19-14  
Feasibility Study available online

## Memorandum

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Co.  
**Subject:** Item 6A – Review Final Feasibility Study for 2015 Main Stem Restoration Project, Golden Valley (CIP CR2015)  
BCWMC June 19, 2014 Meeting Agenda  
**Date:** June 10, 2014  
**Project:** 23270051 2014 630

### 6A Review Final Feasibility Study for 2015 Main Stem Restoration Project, Golden Valley (CIP CR2015)

#### Summary:

**Proposed Work:** 2015 Main Stem Restoration Project (CIP CR2015)

**Basis for Commission Review:** Final Feasibility Study Review

**Change in Impervious Surface:** N.A.

#### **Recommendations:**

- 1) Approve feasibility study, and
- 2) Direct staff to forward final feasibility study to Hennepin County Environmental Services

The 2015 Bassett Creek Main Stem Restoration project (CIP CR2015) is being funded by the BCWMC's ad valorem levy (via Hennepin County). The City of Golden Valley provided the draft feasibility study to the BCWMC Engineer for review, as directed by the Commission at their February 20, 2014 meeting. The city's consultant revised the draft feasibility study based on comments provided by the Commission Engineer and provided the final draft of the feasibility study to the Commission Engineer for review.

#### **Feasibility Study Summary**

The City of Golden Valley's Draft 2015 Bassett Creek Main Stem Restoration Project Feasibility Report (WSB, June 10, 2014) examines the feasibility of restoring sites along the 9,500-foot reach of the creek from 10<sup>th</sup> Avenue North and Rhode Island Avenue North. The city's consultant (WSB) identified 29 sites where bank erosion, bank failure, and infrastructure repairs were needed, in addition to removal of debris, fallen trees, gabion baskets, and block walls.

This reach of the Main Stem is included in the Commission's 2009 Resource Management Plan (RMP). The goal of the RMP was to streamline the US Army Corps of Engineers (USACE) permitting process. The feasibility report notes that the USACE was consulted and that the report follows the protocols developed by the Commission and the USACE for projects included in the RMP. The feasibility report incorporates

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the results of a wetland delineation and functional assessment, a reconnaissance-level survey of cultural and historical resources, and a Phase I environmental assessment.

The feasibility report identifies two restoration design options for the project: 1) a bioengineering (or soft armoring) approach that uses techniques that rely primarily on vegetation, and 2) a more structural (or hard armoring) approach that uses rock and other non-vegetative materials. The feasibility report estimates that the bioengineering/soft armoring approach would require the removal of approximately 800 trees, while the more structural/hard armoring approach would require the removal of approximately 400 trees. A combination of these two options has been preliminarily selected as a preferred option in many of the restoration areas.

The feasibility report includes the following stream stabilization techniques: slope shaping, biologs, biologs with fieldstone, live fascines (dormant willow and dogwood cuttings), vegetated reinforced slope stabilization (VRSS), root wads, live stakes, rock vanes, fieldstone riprap, and fieldstone boulder.

The following text, quoted from the feasibility report, provides the approach the city will use in selecting the design option for each particular site:

*The selection of the best option for a given stream reach will be based on a number of factors including but not limited to; ease of and ability to obtain access for installation and future maintenance, slope of creek bank, presence of mature trees in the area and need to remove trees, exposure of creek bank to sunlight, velocity of flow in channel reach, and property owners' preferences for type of treatment.*

*Since selection of the type of treatment used in a given area, will need the support of the property owner, the City will need to finalize the design approach as a collaborative effort with the property owner. At this time, based on our review of the feasible options available and input from a number of property owners that attended a public informational meeting on the project, it is anticipated that either the vegetative or hybrid option would be selected for most areas of the channel requiring stabilization work.*

The estimated cost to complete all of the work identified in the feasibility report is \$1,320,000 to \$1,660,000. The report notes that the Commission has \$1,000,000 available for the project; the project scope will be refined as the project progresses to meet the level of funding provided.

The feasibility report estimates that the implementation of the project would reduce the total phosphorus load by 60 – 100 pounds per year and the total suspended sediment load by 140,000 – 200,000 pounds per year. Assuming an average of 30 pounds per year of total phosphorus removal over 30 years, the feasibility report estimates the annualized cost per pound of phosphorus removal to be \$1,100 to \$2,200.

The feasibility report includes information about the project's required permits/approvals:

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- 1) Clean Water Act Section 404 permit from the USACE, or Letter of Permission under a General Permit, and Section 401 certification from the Minnesota Pollution Control Agency (MPCA)
- 2) Compliance with the Minnesota Wetland Conservation Act
- 3) Public Waters Work Permit from the Minnesota Department of Natural Resources. The proposed project should also follow the MPCA's guidance document for managing dredged materials, if applicable.
- 4) City of Golden Valley Stormwater Permit
- 5) City of Golden Valley Right-Of-Way Permit

## **Recommendations**

The Commission Engineer recommends the Commission consider:

- 1) Approving feasibility study, and
- 2) Directing staff to forward final feasibility study to Hennepin County Environmental Services2) Direct staff to forward final feasibility study to Hennepin County Environmental Services